

REMARKS

Applicant would like to thank the Examiner for the careful consideration given the present application.

Claims 1-26 remain in this application. Claims 1-17 have been allowed by the Examiner. The Examiner has further acknowledged that claims 22-25 are directed to allowable subject matter. These claims will not be discussed further in this amendment.

The present invention is directed to a method of supplying workpieces to workstations using an autoloader. The method includes receiving one or more signals from individual workstations; signal types including call signals, ready signals, and error signals. From a group of received call signals, the oldest call signal that has not been responded to and has not come from a workstation that has also transmitted an error signal is responded to first. Response includes moving a selected workpiece from an input area to the selected workstation that transmitted the selected call signal. A ready signal or error signal is sought from the selected workstation. If a ready signal is found, the selected workpiece is loaded into the selected workstation. If instead an error signal is found, the process starts over and the next oldest call signal is responded to. Accordingly, the present invention is directed toward a manufacturing environment wherein multiple workstations are available to perform the same manufacturing or machining task (i.e. parallel manufacture).

The Rejections under §103

Claims 18-21 and 26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,662,076 to Conboy et al. (hereinafter Conboy). The Examiner's rejection is traversed for the following reasons.

Conboy is directed to the management of move requests from a factory system to an automated material handling system. A method is described which includes receiving a move request from the factory system and selectively passing the move request to an automated material handling system (AMHS) based on a comparison of the move request with one or more conditions of the AMHS. The factory system typically stores a processing sequence for semiconductor wafers or the like, the sequence comprising a series of steps which are performed on the wafer. The AMHS includes a database of conditions such as the capacity of a tool and if the tool is down or otherwise inoperable. Conboy does not disclose a system where the AMHS receives requests for parts from the tool itself.

Regarding claim 18, Conboy does not disclose or teach a method of supplying workpieces to a plurality of workstations including the steps of "receiving all call and error signals transmitted from the workstations", and "supplying each of the workstations that transmits a call signal" wherein the supplying step is performed "such that the workpieces are supplied to the workstations based on the chronological order of the receipt of the call signals from the workstations". Rather, Conboy discloses and teaches a method where a *factory system* transmits signals to an AMHS to move parts (typically semi-conductor wafers) to load the tools where work is performed on the parts.

Applicant understands the Examiner's point that the sensor and control circuitry

attached to the factory tools of Conboy allow them to communicate with the factory system and in some way may be considered part of the factory system. However, the factory tools are not transmitting call signals. Conboy teaches recognizing the status of a tool and if for instance that tool is full changing the destination tool to another tool, however this is not the same as, nor an obvious variation of, a workstation issuing a call signal. Take, for instance, an example of a factory system trying to supply a part to one of ten tools wherein only the tenth tool has a vacancy. The factory system must cycle through the status of up to nine tools before finding the vacant tool. Further if there are multiple vacancies, the tenth tool may never be loaded. Alternatively, if a workstation submits a call request itself and that workstation does not also send an error request, the workstation can be filled, in a chronological order, without the need for inquiries to be sent to any other workstations. This provides an increase of speed and efficiency in the factory as well as a way to minimize downtime of individual workstations. And because requests are addressed in chronological order, no one workstation is regularly idle and as a result of this regular cycling, regular maintenance scheduling becomes easier. Applicant does not concur with the Examiner that this concept of supplying workpieces to workstations is a obvious variant of the concept taught by Conboy. Reconsideration and withdrawal of the rejection of claim 18 is respectfully requested.

Regarding claim 19, Conboy does not disclose a method of supplying workpieces to a plurality of workstations including the step of determining whether "one of the workstations has transmitted an error signal, moving said one of the workpieces to a next one of the workstations that transmitted a call signal that was received subsequent to the call signal from said one of the workstations." As described above

with respect to claim 18, Conboy does not teach or suggest call signals received directly from workstations. Rather, Conboy teaches a factory system that sends move signals to an AMHS. Reconsideration and withdrawal of the rejection of claim 19 is respectfully requested.

Regarding claim 21, Conboy does not disclose or teach a method of moving a workpiece through a workline comprising a plurality of work zones including the steps of "receiving all call and error signals transmitted from the workstations in the first one of the zones" and "for all received call signals from the workstations in the first one of the zones, determining a selected one of the call signals, which is the oldest one of the call signals that has not been responded to and has not come from a workstation that has also transmitted an error signal." As described above with respect to claims 18 and 19, Conboy does not teach or suggest call signals received directly from workstations. Rather, Conboy teaches a factory system that sends move signals to an AMHS. Reconsideration and withdrawal of the rejection of claim 21 is respectfully requested.

Both claims 20 and 26 depend directly or indirectly on claims which are allowable for reasons brought forth in this amendment. Reconsideration and withdrawal of the rejection of claims 20 and 26 is respectfully requested.

In light of the foregoing, it is respectfully submitted that the present application is in a condition for allowance and notice to that effect is hereby requested. If it is determined that the application is not in a condition for allowance, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge

same to our Deposit Account No. 18-0160, our Order No. HON-14852.

Respectfully submitted,

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